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AUTHOR Betancourt-Smith, Maria
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ABSTRACT

P.L. 94-142 mandated that handicapped children be provided a free appropriate education in the least restrictive environment. This study was conducted to determine: (1) perceptions of high school teachers with respect to reasonableness of accomodative strategies for teaching mainstreamed learning disabled (LD) students; (2) teachers' use of accommodative strategies; and (3) factors that constrain teachers' use of accomodative strategies. Data were gathered from a pair of surveys and interviews with 38 high school teachers involved in mainstreaming. Data analysis revealed the following teacher perceptions: (1) mainstreaming is not working as it should; (2) few accommodative strategies for LD students are being used; (3) little or no training is offered for teaching handicapped students of any sort; (4) constraints imposed by school districts keep teachers from using accommodative strategies; and (5) administrators, operating under constraints imposed by governmental agencies, while complying with the law, are not allocating the resources that would provide the training, supervision, materials, and/or personnel that would help train teachers to use accommodative strategies. The paper concludes with recommendations for practice and recommendations for further research. (Contains 25 references.) (LL)

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ACCOMMODATIVE STRATEGIES FOR MAINSTREAMED LD STUDENTS: HIGH SCHOOL TEACHERS' PERCEPTIONS OF REASONABLENESS AND USE

MARIA BETANCOURT-SMITH

P.O. Box 364
Woodville, Texas 75979

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Accommodative Strategies for Mainstreamed LD Students: High School Teachers' Perceptions of Reasonableness and Use

Statement of the Problem

P. L. 94-142 mandated that handicapped children be provided a free appropriate public education in the least restrictive environment. The United States Department of Education in its Tenth Annual Report to Congress on the Implementation of the Handicapped Act said that 21 of 24 states monitored were found to be noncompliant with the least restrictive environment mandate because they removed students from general education without sufficient justification (Greenburg, 1989, p. 12). Texas was one of the states (Gallegos and Anderson, 1989). Thus students with handicaps were not being educated to the extent appropriate in the mainstream classroom. For some students with mild academic handicaps the least restrictive environment (LRE) is the mainstream or regular classroom. In this setting students with handicaps are educated with those who have not been identified as having a handicap.

Students with mild academic handicaps, including those students who are learning disabled (LD), have benefitted academically and socially from placement in the regular mainstream classroom when instruction has been individualized or supplemented by resource support (Madden & Slavin, 1983, pp. 555, 557). Placement outside the regular classroom has been found to have negative outcomes. Meece and Wang (in Madden & Slavin, 1983, p. 534) found that students with mild academic handicaps who were in the regular classroom all day had higher self-esteem and perceived confidence than those students who spent only part of the day in regular classes.

Research on teachers' thought processes suggests that teachers' classroom behavior and students' classroom behavior influence one another and then have an effect on student achievement (Clark & Peterson, 1986, p. 257). There is also a reciprocal relationship between teachers' thoughts and their actions. Research on teachers' thought processes recognizes that

within every teaching situation there are constraints and opportunities which affect teacher's thoughts and actions (Clark & Peterson, 1986, p. 258). It is important to note factors that help to mold teachers' perceptions of the reasonableness of mainstreaming students since these factors have an effect on teachers' expectations.

> Research findings suggest that teachers' thought processes are affected profoundly by the task demands and by the teachers' perceptions of the task....teachers' actions are in a large part caused by teachers' thought processes, which then in turn affect teachers' actions. (Clark and Peterson, 1986, p. 258).

It appeared from the USOE report that not all mainstream teachers were adapting instruction so that LD students could achieve success in the regular classroom. Therefore, there was a need to determine teachers' perceptions of the reasonableness of accommodative strategies they could use for LD students as well as a need to determine teachers' perceptions of the frequency with which they used specific accommodative strategies. There was a need to find out what constrained teachers from behaving in accordance with their perceptions of reasonableness. Knowing this could offer some hope for solving the problems which stand in the way of effectively educating LD students in the least restrictive environment of the mainstream classroom.

Theoretical Framework

Teachers' attitudes toward mainstreaming have been studied predominantly through the use of quantitative methods (e.g. Olsen, 1987; Rogove, 1984). Poplin (1987, p. 31) has gone so far as to suggest that the exclusive use of quantitative methods to research special education has blinded educators to issues that could not be addressed through such methods. She said (p. 37) that a qualitative approach should be used if educators want more than a superficial understanding of the institutions that serve students with learning problems. Kauffman (1987, p. 61) agreed with Poplin that qualitative research methods can add to our understanding of educational phenomena in special education.

However, he did not think quantitative measures should be abandoned.

The findings of research done on teachers' attitudes and behaviors toward mainstreaming of LD students are difficult to interpret. Some of the research has overlooked the need for measures of attitude to parallel measures of behavior (e.g., Alexander, 1983; Robertson, 1983). Other research has not taken care to make sure that the behavior and attitude measures paralleled one another (e.g., Lepelstat, 1984).

There exists research, independent of instruction, which has explored the effect of attitude on behavior. Research on attitude-behavior correspondence looks to see if there is a correspondence between cognitions and behavior. Such research is relevant to the study of teacher thought processes which are described by Clark and Peterson's (1986, p. 257) two domain model in which one domain includes teachers' thought processes and the other domain includes teachers' actions and their observable effects.

Schuman and Johnson (1976) did an extensive review of research on attitudes and behavior. They found: 1) that attitudinal measures cannot be substituted for behavioral measures; and 2) that attitude measures would be more predictive of specific behaviors if the questions on the attitude measures were about specific behaviors rather than about general behaviors. An important point that they made, and a point that is related to variables affecting teachers' attitudes and behaviors toward mainstreamed LD students was that, "a favorable attitude toward a particular behavior ... should be linked to behaving in that way, provided there are not constraints that prevent such behavior" (p. 172).

Ajzen and Fishbein (1977) analyzed studies that looked at attitude behavior correspondence. They found a high and significant correlation between attitude and behavior when the attitudinal measurement focused on the same group and behaviors as did the behavioral measurement.

Methods And Procedures

In order to provide more useful information this study employed quantitative and qualitative methods. This study was designed to make sure that the perceptions measured were perceptions of specific behaviors. In addition, it was planned so that there would be a correspondence between measures of attitude and measures of behavior. Specifically, the study was designed to answer the following research questions:

1. What are teachers' perceptions of the reasonableness of accommodative strategies for teaching mainstreamed LD students?
2. What are teachers' perceptions of the frequency of their use of the different accommodative strategies?
3. To what extent are teachers' perceptions of reasonableness of accommodative strategies in agreement with their perceptions of their behavior in using accommodative strategies?
4. What are the reasons which teachers give for behavior that is lacking in agreement with perceptions of reasonableness?

Question one regarding teachers' perceptions of the reasonableness of accommodative strategies was answered by the administration of the first survey, Reasonableness of Accommodations for Mainstreamed Secondary LD Students, during the fall of the 1990-91 school year. Question two which was concerned with teachers' perceptions of the frequency with which they used accommodative strategies was answered by the second survey, Frequency of Accommodations for Mainstreamed Secondary LD Students, which was conducted during the winter. The third question which investigated the agreement between teachers' perceptions of reasonableness of accommodations and reported behaviors was answered by comparing choice distributions on the two surveys. Interviews of teachers were conducted during the spring to answer question four which sought to determine reasons for lack of agreement between individual teacher's perceptions of reasonableness of accommodative strategies and their perceptions of frequency of use of accommodative strategies.

Sample

Volunteers for this study were mainstream high school teachers who had or had had LD students in their classes. They were recruited from five schools in four purposefully chosen school districts in East Texas. Two of the schools were in an urban school district in which there were two ninth grade campuses, and two schools housing grades ten through twelve. Students from School A, the ninth grade campus chosen, fed into School B. School C was in a nearby suburban school district. School D was the only high school in a district in a small town. The fifth school, School E, was the only high school in a large town.

Fifty-nine persons volunteered to do the surveys (the responses of three volunteers from school B were not counted when because they were resource teachers). The response rate for the first survey was 78.57%. The second survey had a response rate of 95.23%. Thirty-eight pairs of surveys were usable.

Eleven percent of the total number of teachers in the schools included in this study responded to the surveys. Table 1 describes the schools by grade levels, number of teachers, and number of volunteers. In addition it shows what percent of the teachers in each school responded to the surveys and what percent of the surveys were usable.

Table 1
Description of Schools by Grade Levels, Number of Teachers, and by Number of Volunteers

School	A	B	C	D	E
Grades	9	10-12	9-12	9-12	9-12
Teachers	38	108	43	60	106
Volunt.	7	11	13	8	17
Resp. S1~	6	10	8	6	14
Resp. S2^	6	8	8	5	13
Usable	6	8	8	5	11
% of school usable	16	7	19	8	10
% of all usable	16	21	21	13	29

~Responded to Survey 1

^Responded to Survey 2

Table 2 shows how teachers were distributed among subject areas. The distribution of respondents in the specific content areas of the sample resembles that proportion of teachers found in the different content areas in Schools B and E (schools B and E provided the researcher with complete rosters of the faculty including teaching assignments thus making it possible to determine the distribution of teachers in content areas). Courses counted under the heading of "career" included vocational courses. Courses titled "other" included: 3 teachers who taught business; and 1 each who taught marketing, French, reading, art, and physical education. Under the heading of "mixed": one teacher taught English and social studies; another taught English, Psychology , and Sociology; the third taught social studies and Spanish.

Table 2
Subject Taught

School	A	B	C	D	E	Sum	% Total
English	1	3	1	-	2	7	18
Math	3	1	1	-	2	7	18
Science	-	-	2	-	2	4	11
Soc.Stu.	2	-	1	1	1	5	13
Career	-	3	1	-	-	4	11
Other	-	1	-	3	4	8	21
Mixed	-	-	2	1	-	3	8

Table 3 shows how volunteers were distributed among different grade levels. It should be noted that LD students have a high dropout rate and that this may account for the smaller number of respondents who were teaching LD students in the eleventh and twelfth grades.

Table 3
Grade Level Taught

School	A	B	C	D	E	Sum	% Total
Ninth	6	-	2	-	6	14	37
Tenth	-	3	3	-	1	7	18
Eleventh	-		2	-	1	3	8
Twelfth	-	2	1	1	-	4	11
Mixed	-	3	-	4	3	10	26

Teachers' years of experience teaching are displayed in Table 4. The range of years teaching was from 1 year to 35 years. The average number of years teaching was 14.6; the median was 13; the two modes were 10 and 20.

Table 4

Years of Experience Teaching

School	A	B	C~	D	E	Sum	% Total
1-3	-	1	-	1	2	4	11
4-9	-	2	1	1	5	9	24
10+	6	5	6	3	4	24	65

~one teacher did not indicate the number of years teaching experience

The group of teachers who were chosen to be interviewed included: three English teachers; two science teachers; two math teachers; two social studies teachers; one physical education teacher; one art teacher; one marketing teacher; one business teacher; one home economics teacher; and one teacher who taught three content areas.

Survey Form

The survey form chosen for this study, Reasonableness of Accommodations for Mainstreamed Secondary LD Students, was developed under the auspices of the Bureau of Special Education in the Department of Education of the state of Iowa in 1986 (ERIC Report NO. ED 278 186). The survey on accommodative strategies for LD students contains 145 items which are statements of strategies which teachers can use to accommodate the learning needs of LD students. The items are grouped into three sections. Nine items comprise the section on accommodative strategies in classroom environment; 110 items deal with accommodative strategies which can be used in instruction, materials, and aids; and 26 items deal with accommodative strategies in evaluation.

The survey form was adapted in two ways for this study. First, the three point scale of reasonableness was changed to a four point scale to force responses regarding the reasonableness of accommodative strategies to be positive or negative rather than neutral. Second, the reasonableness survey with a four point scale was adapted to survey the frequency of use of the same accommodative strategies for LD students. The responses to

the survey on frequency of use of accommodative strategies indicated how often teachers used different accommodative strategies.

Interview Format

Reasons for lack of agreement between teachers' perceptions of reasonableness of certain accommodative strategies and their reported use of those accommodative strategies were sought through semi-structured interviews. The procedures used to interview respondents followed a format used by Claesson and Brice (1989) as an exploratory interview guide.

> (a) the same issues or questions were covered with all informants, (b) the order of the questions was fitted to the individual interview situation, (c) individual perspectives and experiences were allowed to emerge, and (d) what informants would consider important issues was not presupposed. (p. 5)

Teachers were asked six sets of questions as part of the interview. The first interview question specifically asked teachers for reasons for lack of agreement in their own responses. Other interview questions sought to elicit information regarding factors which could affect teachers' thought processes and thus their interaction with LD students and subsequently student achievement in the mainstream classroom. In a study done by Johnson and Pugach (1990, p. 72) teachers were given a frame of reference for answering interview questions by being shown three intervention strategies that they had given the highest ranking for reasonableness and three strategies which they had given the lowest ranking. That approach was modified for this study in an effort to determine not only what criteria teachers used to determine what was reasonable and unreasonable, but also to determine what constrained teachers from acting on their perceptions of reasonableness or unreasonableness. Triangulation of interview data was achieved by having informants respond to a summary of their interview and by interviewing building principals.

Data Analysis

Statistics to answer question one regarding teachers' perceptions of the reasonableness of accommodative strategies were based on the first survey and took the form of mean scores and percentages of choice distributions for each item. Statistics to answer question two which asked how teachers perceived their frequency of use of different accommodative strategies were based on responses to the second survey form and took the form of percentages of choice distributions.

There were a substantial number of items in both surveys which received positive replies as indicated by the percentage of persons circling a 3 or 4. Therefore, it was decided to determine which were the most positive responses by looking at those items for which 70% or more of the teachers circled a 4. Since the number of items which 70% or more of teachers marked negatively as indicated by circling a 1 or 2 was small, it was decided to identify those items which 50% or more of the teachers considered unreasonable and those items which 50% or more of the teachers seldom or never used. Items which 50% or more of teachers find unreasonable or which 50% or more of teachers seldom or never use may be those which require some sort of attention if they are to be implemented.

Question three, which looked at the agreement between teachers' perceptions of reasonableness and perceptions of frequency of use of accommodative strategies, was answered by comparing choice distributions on the two surveys.

Interviews of teachers were used to answer question four, which sought to determine reasons for lack of agreement between perceived behavior and expressed attitudes. To determine which teachers would be interviewed, each individual teacher's raw score on the first survey was compared with the raw score on the second survey to determine the agreement between individual teacher's perceptions and their reported behaviors. This comparison took into account that on the second survey teachers had the option of indicating that some items were not applicable to their teaching situation.

The steps followed for analyzing interview data were similar to those Claesson and Brice (1989, p. 6, closely paraphrased) used to analyze interview data from an exploratory study:

1. Recurring topics and remarks of interest were noted.
2. The respondents' answers to interview questions were arranged in sequence so that the answers could be compared and the reorganized transcripts were read again and recurring topics categorized.
3. The most common topics were defined and selected thus identifying recurring themes.
4. Transcripts were reread and statements were extracted that concerned expectations (a prevalent theme in the Claesson and Brice study).

After transcribing tapes, the first step in this study was to arrange respondents' answers in the same sequence so that summaries could be written to do a member check. Next the original transcripts were reread and topics of interest to the study were noted. The reorganized transcripts were then read again and common topics were defined. Last, the original transcripts were read again and statements that reflected recurring themes were extracted.

Results and Discussion of Survey Data

Tables 5, 6, and 7 summarize some of the statistics based on the two surveys. The reader is referred to the author's dissertation (Betancourt-Smith, 1991) for further tables of statistics. On the survey of reasonableness, teachers marked a 1 for very unreasonable, a 2 for somewhat unreasonable, a 3 for somewhat reasonable, and a 4 for very reasonable. On the survey of frequency, teachers marked a 1 for never, a 2 for seldom, a 3 for often, and a 4 for always.

Tables 5, 6, and 7 list the items from the surveys according to their rank order for reasonableness. Mean scores based on responses to the survey on reasonableness are also included. There were only 3 items found very reasonable and always used by 70% or more of teachers. There were 7 items that 50% or more of

teachers found unreasonable and seldom or never used.

Under the R column (for reasonableness of accommodations), a plus (+) sign marks those items that 70% or more of teachers found very reasonable, and a minus (-) sign marks those items that 50% or more of teachers found unreasonable. Under the F column (for frequency of accommodations), a plus (+) sign marks those items that 70% or more of the teachers always used and a minus (-) sign marks those items that 50% or more of the teachers seldom or never used.

Table 5

Rank Order and Means for Reasonableness of Accommodations in the Classroom Environment

R	F	Rank	Mean	Item No.
+		1	3.71	1. Provide for preferential seating.
		2	3.45	6. Post assignments in the same place.
		3	3.32	7. Use peer tutors.
		4	3.21	8. Use volunteers (if volunteers are available).
	-	5	3.18	4. Reduce auditory distractions (unusual/unnecessary noise factors).
		6	3.08	2. Reduce visual distractions (unusual/unnecessary clutter/gaudiness).
		6	3.08	3. Assign learning partners.
	-	8	2.95	9. Assign student to cooperative learning groups (3 to 6 in a group).
-	-	9	2.18	5. Use a listening center.

Table 6

Rank Order and Means for Reasonableness of Accommodations in Instruction, Materials, and Aids

R	F	Rank	Mean	Item No.
+		1	3.87	78. Summarize and allow for questions.
+		1	3.87	91. Provide a time frame for long assignments.
+		3	3.82	97. Work from the easy to the hard problems.
+		4	3.79	68. State the purpose for reading when giving a reading assignment.
+		4	3.79	84. Circulate and assist (teacher).
+	+	4	3.79	98. Allow explanation time-provide teacher instruction before giving the assignment.
+		7	3.76	43. Provide a list of materials needed.
+		7	3.76	66. Use concise directions (both written and oral).
+		7	3.76	76. Orally emphasize key words.
+		7	3.76	83. Vary voice, tone and pitch.
+		7	3.76	87. Establish a daily routine.
+		12	3.74	12. Provide clear copy (worksheets, handouts, etc.).
+	+	12	3.74	65. Summarize key points.
+		12	3.74	79. Give oral and written directions together.
+		12	3.74	90. List the steps necessary to complete an assignment.
+		16	3.71	67. Introduce new vocabulary.
+		16	3.71	75. Verbalize the steps necessary to complete an assignment.
+		18	3.68	102. Provide work time during class.
+		18	3.68	104. Provide immediate feedback when possible.
+		20	3.66	41. Encourage the use of a notebook with dividers for subject organization (student purchases).
		20	3.66	63. Have structure (concrete, developmental procedures).
		20	3.66	81. Emphasize where the directions are located.
		20	3.66	89. Work from factual to abstract questions (concrete to abstract).
		24	3.63	47. Clarify the criteria and format when giving written assignments.
		25	3.61	101. Stress accuracy.
	+	26	3.58	24. Write key points on the board or overhead.
	+	26	3.58	64. Use clues/hints.

Table 6

Continued

R	F	Rank	Mean	Item No.
		26	3.58	85. Teach cues and other listening skills.
		29	3.55	88. Explain any change in routine.
		29	3.55	93. Provide direction when the student has several options.
		29	3.55	103. Provide specific feedback on completed work.
		29	3.55	111. Organize lectures following an outline form.
		33	3.53	62. Have frequent review.
		33	3.53	99. Allow more time to complete (pacing).
		33	3.53	106. Allow visual aids with oral reports.
		33	3.53	118. Provide feedback during lectures.
		37	3.50	23. Explain the textbook format at the beginning of the course.
		38	3.47	29. Provide examples on worksheets.
		38	3.47	105. Allow notes with oral reports.
		40	3.45	11. Use diagrams and other visual aids.
		40	3.45	73. Teach use of context clues.
		40	3.45	92. Give additional time for the student to organize.
		40	3.45	114. Teach the needed structure for reports.
		44	3.42	38. Use samples of finished product as a model.
		44	3.42	44. Teach abbreviations germane to the specific course.
		44	3.42	51. Accept multi-modal response (ex. oral response instead of written).
		44	3.42	100. Use short answers.
		44	3.42	113. Teach outlining/provide a model.
		49	3.39	40. Provide worksheets with an uncluttered format.
		49	3.39	61. Teach in small sequential steps.
		49	3.39	82. Talk slower.
		49	3.39	94. Provide cues to comprehension of inferential thinking.
		49	3.39	95. Teach SQ3R process (survey, questions, read, recite, review).
		54	3.37	45. Provide a study guide.
		54	3.37	117. Assist the student with spelling requests.
		56	3.34	74. Brainstorm words (both when introducing or practicing vocabulary).
		56	3.34	80. Have the student repeat the directions.

Table 6

Continued

R	F	Rank	Mean	Item No.
		58	3.32	26. Complement lecture of materials with added explanations.
		58	3.32	33. Provide a word bank for new or unfamiliar vocabulary.
		58	3.32	115. Modify the original task to meet the needs of the student.
	-	61	3.29	52. Ask student to skip lines in draft when doing a written assignment (write on every other line).
	-	61	3.29	72. Use small groups to discuss the main ideas.
		61	3.29	109. Teach techniques to aid in generalization.
	-	64	3.26	77. Distinguish operations in math.
	-	65	3.24	25. Use peer student to take notes and/or to compare with the LD student's notes.
		65	3.24	58. Utilize a consistent format for worksheets.
		65	3.24	60. Use "hands on" activities.
		68	3.21	14. Provide activity worksheets.
		68	3.21	107. Provide the option to read silently or orally.
		68	3.21	108. Adjust the time limit on oral reports.
		68	3.21	119. Provide careful structuring to teach writing skills.
		72	3.18	96. Allow some written assignments to be done as a group project.
		73	3.16	32. Use audiovisuals to introduce and/or summarize.
		73	3.16	59. Utilize a multisensory presentation (ex. written, oral, lab work).
		73	3.16	112. Reduce copying activities.
		73	3.16	116. Proofread the student's draft.
		77	3.13	15. Allow correction of notes by using a model (teacher's copy).
	-	77	3.13	35. Allow use of a marker when reading.
		77	3.13	39. Provide a list of all assignments given (a syllabus).
		80	3.11	70. Have discussions with the individual student to insure comprehension.
		80	3.11	86. Adjust expectations (ex. minimize the amount the student must do to pass the course).
		82	3.08	71. Discuss the individual student's written response.

Table 6

Continued

R	F	Rank	Mean	Item No.	
		83	3.05	22.	Use tangible teaching aids (manipulatives).
	-	83	3.05	36.	Allow use of a calculator and other appropriate aids.
		85	3.00	42.	Supply the page number where the answer is to be found.
	-	85	3.00	69.	Use reading pairs (2 students read the assignment together).
	-	87	2.95	20.	Have the student use a log or personal journal.
	-	87	2.95	46.	Use a story starter approach (give the first paragraph and have the student complete the story).
	-	89	2.92	55.	Substitute comparable reading projects in place of written assignments.
		90	2.89	50.	Use instructional games.
		91	2.87	10.	Select material relevant to the students.
		91	2.87	18.	Visually illustrate new vocabulary.
	-	91	2.87	110.	Use team teaching (when feasible).
	-	94	2.79	19.	Have the student maintain a notebook for misspelled words.
-		94	2.79	37.	Modify map/chart work.
		96	2.76	21.	Coordinate spelling needs with reading vocabulary.
	-	96	2.76	31.	Use a worksheet guide with film.
	-	98	2.71	48.	Teach divided page note-taking.
	-	98	2.71	49.	Allow to preview lecture notes.
	-	100	2.68	27.	Give the student a copy of the teacher's notes.
	-	100	2.68	30.	Have the student use a problem solving sequence chart.
	-	100	2.68	34.	Provide graph paper for correctly lining up math problems.
	-	103	2.63	57.	Provide large print materials.
		104	2.61	17.	Divide multi-syllable words.
	-	104	2.61	28.	Give the student a written outline of the lecture.
		104	2.61	56.	Match pupil's ability to text used/or use a companion text.
	-	107	2.53	54.	Allow student to tape oral reports rather than present to the group.
-	-	108	2.47	53.	Allow student to tape answers instead of writing answers.
-	-	109	2.29	16.	Provide highlighted texts.
-	-	110	2.16	13.	Provide taped material for listening, rather than having the student read.

Table 7

Rank Order and Means for Reasonableness of Accommodations in Evaluation

R	F	Rank	Mean	Item No.
+	+	1	3.82	138. Provide a clear copy of the test.
	+	2	3.68	139. Provide review time in or outside of the class (emphasizing the key points to study).
	+	3	3.66	140. Provide advance notice for test preparation (preferably at the start of the unit).
+		3	3.66	145. Have the grading system reflect varied activities (homework, tests, projects, presentations).
		5	3.45	132. Read the directions to the student.
		5	3.45	141. Provide examples of the test content and format.
		7	3.39	122. Increase the time allowed for completion.
		7	3.39	124. Provide feedback to the learner regarding progress via teacher-student conference or written report.
		9	3.37	131. Underline the important words in directions or in test items.
		10	3.34	120. Vary test format(written, oral, short answer, essay, multiple choice, true-false, matching, computation, yes-no, demonstration testing).
		11	3.26	121. Emphasize higher utilization of objective tests (in contrast to subjective tests).
		11	3.26	123. Provide feedback to parents regarding progress via phone, letter, or parent conference.
		13	3.08	133. Block matching questions into smaller groups (ex. 5/5/5/ rather than a group of 15 items).
	-	14	2.95	134. Eliminate one of the choices in multiple choice questions (choose three answers instead of four).
		14	2.95	142. Allow self checking.
		16	2.87	130. Change fill-in-the-blank format to multiple-choice format.
	-	17	2.84	143. Allow to recheck work on a calculator.
	-	17	2.84	144. Chart grade progress for student use.

Table 7

Continued

R	F	Rank	Mean	Item No.	
		19	2.82	137.	Vary the grading system - homework, test, class discussion, special projects.
		20	2.79	127.	Take test orally (with teacher after school or with special teacher in the resource room).
		20	2.79	128.	Assist by reading the test questions to the student.
		20	2.79	136.	Review orally and individually to ensure comprehension of essay questions.
	-	23	2.71	135.	Reduce the weight of test importance.
-	-	24	2.47	129.	Take the exam in the classroom during the regular classtime; take the exam again orally in the resource room; average the two scores.
-	-	25	2.29	126.	Allow the student to tape essay answers on a recorder.
-	-	26	1.87	125.	Teacher records the test on cassette tape.

Overall, the accommodative strategies which 70% of any group perceived as highly reasonable and always used, were those which were easy to implement because they required little if any additional time, little change in routine, no help from other personnel, and no materials that were not readily available. Those accommodative strategies which 50% or more of any group considered unreasonable and seldom or never used, were generally ones that were not easily implemented because they required a great deal of additional time, a change in usual procedures, help from outside personnel, or materials that are not readily available. While some items listed as unreasonable may be considered easy by some persons it may be that there are constraints within the school which make teachers see them as unreasonable and therefore not usable. Reducing the weight of test performance was one accommodative strategy that teachers in one school district found unreasonable and never used because it was prohibited by school district policy. Some items may be

considered unreasonable because teachers have not been trained to use accommodative strategies to meet the various learning needs of students. Other items may be considered unreasonable because teachers philosophies place low value on some accommodative strategies or higher value on others.

Most of the accommodative strategies that teachers used yet found unreasonable are difficult to implement. It may be that teachers of certain groups do not think that they should have to use accommodative strategies, but do so in order to allow students to succeed. It may be that teachers use accommodative strategies they consider unreasonable because they are under duress to do so. Perhaps teachers use accommodative strategies they consider unreasonable because they have been told either in pre-service or in-service education that they should accommodate the needs of LD students.

Most of the accommodative strategies that were considered reasonable yet were seldom or never used are not easy to use because they require some extra time, change in usual procedures, materials that are not readily available, and/or help from support personnel. Some may also be accommodative strategies that teachers were not familiar with and thus did not use. Some accommodative strategies that are generally applicable may not be used because of local constraints. The difference in numbers of accommodative strategies listed for different groups may reflect teachers' perceptions of the applicability of accommodative strategies to their teaching situations. The difference may also be attributed to differential training for using accommodative strategies.

Results and Discussion of Interview Data

Teachers' responses to the interview questions confirmed constraints inferred from comparisons of the survey data. Time was the primary constraint which kept teachers from using accommodative strategies. Time related constraints included class size and the number of preparations teachers had to make. Other research has found that teachers' attitudes toward teaching

handicapped students is affected by time related factors (Margolis & McGettigan, 1988; Massie in Salvia & Munson, 1986; Salvia & Munson, 1986). Teachers felt that their pre-service and in-service education had not equipped them to teach LD students. This finding is in agreement with Salend and Johns' review of research which found that teachers feel unequipped to teach exceptional children (1982, p. 82). It did not seem that teachers who participated in this study had been trained to recognize the difference between different handicapping conditions since a number of teachers referred to LD students as slow or low kids.

Teachers' responses to interview questions also provided information that could not have been inferred from the survey data. First, teachers said that the things they did and found reasonable were part of their routine procedures that they did for everyone in their class. Second, school district constraints including lack of materials and support personnel made it difficult for teachers to accommodate the needs of the LD students in their classrooms. Third, ability grouping of students constrained the use of accommodative strategies. Some teachers thought that there was no need to use accommodative strategies for the LD students because they were in basic classes for slow students and the materials had already been modified. Teachers that had classes in which students of different ability levels were grouped heterogeneously found it difficult to teach LD students because they worked slower than other students. Fourth, teachers' perceptions of the characteristics of LD students caused constraints. Based on comments that teachers made during the interviews, it appears that they do not understand what constitutes a learning disability. Teachers referred to LD students as slow kids or low kids. In addition teachers indicated that since LD students were in basic classes there was no need to modify instruction. Siperstein and Goding said that "teachers have strong negative misconceptions of LD children" (1985, p. 139) and they hypothesized that as a result of these negative attitudes, teachers might have low expectations.

Although not all the teachers described LD students as having negative characteristics, teachers did not generally characterize LD students as exhibiting positive traits. The descriptions of the academic characteristics of LD students were negative in the sense that LD students were described as exhibiting problems in learning since they have difficulty with reading and with writing. Teachers descriptions of the social and behavioral characteristics of LD students were contradictory. Perhaps the contradictions can be attributed to the differences in subtypes (identified by Bender and Golden, 1990) within the LD population.

Truesdell (1990) has pointed out that research which describes the characteristics of LD adolescents in mainstream classrooms is limited and is also contradictory. Perlmutter, Crocker, Cordray, and Garstecki (1983) in a study that focused on tenth graders found that teachers and non-LD students rated LD students as more aggressive and disruptive than non-LD students. In an observational study, Zigmond, Kerr, and Schaeffer (1988) found that high school age LD students were much like their nonhandicapped classmates. Truesdell (1990), using observations and teacher ratings of student behavior found that the behavior of mildly handicapped students in grades seven through nine was similar to that of their nonhandicapped peers. The exceptions were that the mildly handicapped students paid more attention than their nonhandicapped peers, but participated less.

It became apparent during the interviews that teachers are not always involved in the planning for students that are to be placed in their classes. One principal said that usually a department representative attended the Admission, Review, and Dismissal (ARD) meeting at which students' Individual Education Plans (IEPs) were written. In addition it became apparent that teachers do not always get the IEPs with suggested modifications in a timely manner, if at all. In one school, teachers said that they did not receive the IEPs until the end of the first six weeks. At another school, teachers were given a list of students who were mainstreamed and then had to go to the counselor's office to see the individual student's modifications checklist.

The kind of assistance that teachers said would help them to accommodate the needs of LD students further emphasized constraints and also indicated ways in which constraints could be overcome. Teachers indicated that they would like assistance in the form of an aide. In addition they said that better and more specific in-service would be helpful. Several indicated the need for notification that LD students were being placed in their classrooms.

Conclusions and Recommendations

An analysis of the survey data and interview data led to several conclusions. First, high school teachers are using few accommodative strategies for LD students. A lack of time caused by class size, the number of preparations, and paperwork is the primary reason. Second, high school teachers believe that they have received little if any training for teaching handicapped students of any sort. Almost none said that they had such training as part of their undergraduate teaching program. In-service programs have not been adequate because the programs have been very general and have not been geared for specific grade levels or subjects. As a result teachers do not know what the needs of children with different handicapping conditions are, nor do they know how to provide for their needs. Third, constraints imposed by school districts keep teachers from using accommodative strategies. Schools do not have available the resources which would provide the supplementary materials or personnel that teachers need to help them to accommodate the learning needs of LD students. Grouping practices also cause problems. In addition teachers are not involved in planning for students who are to be placed in their classrooms, nor are they properly notified so that they may plan for the students that are to be placed in their classrooms. Fourth, administrators operating under constraints imposed by a number of governmental agencies, while complying with the law, are not allocating the resources that would provide the training, supervision, materials, and/or personnel that would help teachers use

accommodative strategies for LD students.

Finally, it appears that mainstreaming is not working as it should, at least not in the schools represented in this study. Mainstreaming may not be working in other schools for reasons similar to those which constrain teachers in the schools in this study. The findings of this study indicated that teachers are using few accommodative strategies for LD students. When students' learning needs are not accommodated, they fail to achieve as they should. When students fail to achieve in the mainstream classroom, they are likely to be placed in the more restrictive environment of the resource classroom. The findings of this study regarding constraints which keep teachers from using accommodative strategies are in accord with the findings of other studies (e.g., Margolis & McGettigan, 1988; Salvia & Munson, 1986). Although teachers indicated that they accept the concept of mainstreaming and that they are willing to do what they can to help LD students succeed in the mainstream classroom, they do not have the time, the materials, or the assistance that they need to accommodate the needs of LD students. Furthermore, they are not sure how to go about accommodating LD students. A few of the teachers learned about some of the modifications from reading the survey instrument.

Siperstein and Goding said that teachers' behavior toward LD students must be changed (1985, p. 143). If behavior is to change then attitudes must change. For change to take place, teachers need to be made aware of the reciprocal effect of their own behavior and student behavior as well as to recognize the effect of their thoughts on their own behavior.

Recommendations for Practice

If mainstreaming is to work, teachers' time constraints must be eased and teachers must be trained to recognize and meet the needs of students with academic handicaps who are placed in mainstream classrooms. Funds must be made available for training, for hiring of aides and supervisory personnel, and for materials. In view of the findings of this research and of the theory of teacher thought processes the following specific recommendations are made:

1. Teachers need to be made aware through pre-service education and in-service of the difference between students who have different handicapping conditions.
2. Teachers need to be taught accommodative strategies that they can use to meet the needs of students with learning disabilities, and they need to be taught to apply the accommodative strategies in their own classroom.
3. Supervisory personnel should be involved in providing leadership and assistance for the implementation of accommodative strategies.
4. Mainstream teachers need to be involved in the planning for students that are to be placed into their classrooms.
5. Teachers need to be given, in a timely manner, those documents that pertain to the modifications that the LD students in their classes need.
6. Teachers need to be involved in a program such as Teacher Expectation - Student Achievement (Kerman & Martin, 1980) which makes them aware of their own classroom behaviors and the effect of their behavior on student achievement.
7. Assistance in the form of an aide to ease time constraints should be provided to teachers who have LD students.
8. Funds should be allocated for materials for LD students in mainstream classrooms.

Recommendations for Further Research

Based on the results of this study and on the experience derived from conducting this research, the following recommendations are made:

1. Surveys should be administered in other districts to determine if the same general trends appear to hold true across settings other than those like the ones in which this research took place.
2. Teachers should be observed in the classroom to determine whether or not their self-reports on the frequency of use of accommodative strategies are accurate.

3. The survey forms should be shortened so as to delete those items that are content-area specific. Then a correlational study can be done since teachers will not have the option of marking items not applicable on the survey on frequency of use of accommodative strategies.
4. A study should be done using the survey form on frequency of use of accommodative strategies as a pre-test and post-test with the intervening treatment being in-service that requires teachers to learn how to use the different accommodative strategies.
5. Junior high school teachers and middle school teachers should be surveyed so that their responses can be compared with those of high school teachers.

Limitations

Since the school districts that constituted the sample were chosen purposefully rather than randomly, results can be generalized only to teachers in school districts similar to the ones where this research took place. Any generalizations that are to be made must also take into account the fact that all respondents were volunteers and that their responses may not reflect the perceptions of nonvolunteers. Interpretation of the responses teachers gave are limited by the fact that the following data were not collected: 1) recency of experience teaching LD students; 2) number of years of experience teaching LD students; 3) number of LD students taught; and 4) perception of success teaching LD students. Generalizations are further limited by the fact that on the second survey teachers reported their own behavior and thus their responses may have expressed what they thought was professionally acceptable or what they thought the researcher wanted to see. However, since the researcher was unknown to the teachers, the researcher has no reason to believe that the teachers' reports were made to reflect what the researcher wanted to hear. In addition, since the findings of the study identified only three accommodative strategies that 70% of the teachers found very reasonable and

that 70% always used, it appears that teachers were truthful and did not attempt to portray their behavior as ideal. There is reason to believe that the general trends which appear in the analysis of the data may be similar to those which might be obtained in similar school settings.

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